BIOLOGICAL EVALUATION
Mountain Pine Beetle Infestation
Ashley National Forest
1973

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INTRODUCTION

The mountain pine beetle continued to kill ponderosa and lodgepole pine throughout much of the pine type of the Flaming Gorge Ranger District during 1973. This infestation is an extension of the widespread outbreak that recently persisted along the North Slope of the Uinta Mountains. The North Slope has a long history of bark beetle activity and control. During the period from 1961 to 1964 over 50,000 trees were chemically treated in the Flaming Gorge Ranger District. Unfortunately, control did no more than prolong the inevitable. This infestation lingers today. For the most part, the extent of the outbreak remained unchanged during 1973 except for new areas of infestation west of Hickerson Park and into Summit County.

TECHNICAL INFORMATION

Insect: Mountain pine beetle, Dendroctonus ponderosae Hopkins.

Host Tree: Lodgepole pine, Pinus contorta Dougl., and Ponderosa pine, Pinus ponderosa Laws.

Type of Damage: Killing of lodgepole and ponderosa pine trees.

Extent of Outbreak: Scattered tree killing is recurring over most of the North Slope of the Flaming Gorge Ranger District. Heaviest losses have occurred at Long Park, Ute Lookout, Greendale Junction (Figures 1 and 2), and Spears Peak.

Location: Flaming Gorge Ranger District, Ashley National Forest, Utah.

BIOLOGICAL INFORMATION

Generalized areas of mountain pine beetle infestation were mapped during the aerial insect detection survey conducted in early August 1973 (see appended map). Except for new areas of infestation west of Hickerson Park, the outbreak area remained essentially unchanged during 1973. On-the-ground evaluation surveys were conducted September 26 and 27, 1973. Using the aerial survey map as a guide, survey areas were selected in areas of known infestation. Infested trees were tallied by year of attack and species along random transects. These data are summarized below:

Area	Number of Attacks						Combined Attack Ratio	Trend
	Lodgepole		Ponderosa		Combined			
	1973	1972	1973	1972	1973	1972		
Greendale Junction 1	47	62	46	58	93	118	0.8:1	Decreasing
Greendale Junction 2	0	3	25	29	25	32	0.8:1	Decreasing
Bootleg Campground	0	0	0	1	0	1	1/	2/
Ute Lookout	65	106	0	7	65	113	0.6:1	Decreasing
Wayman Creek	1	14	0	0	1	14	1/	Decreasing
Long Park	90	231	0	0	90	231	0.4:1	Decreasing
Birch Creek	0	34	0	0	0	34	1/	Decreasing
North Fork Sheep Creek	7	10	0	0	7	10	0.7:1	Decreasing

1/ Attack ratio calculation not realistic.
2/ Tree count too small to represent a meaningful trend.

Attack ratios were calculated using the combined tree tallies and represent the ratio of 1973 attacks to the number of 1972 attacks. These data indicated a decrease in tree killing in all areas during 1974.

For the most part, newly attacked trees contained brood in the early stages of development. Generally, brood density was light with some Ips present. However, most of the mountain pine beetle attacked trees examined in the Long Park area contained exceptionally heavy Ips populations. Also, in other areas surrounding Long Park many trees were infested solely with Ips beetles.

DISCUSSION

Tree killing will decrease during 1974 in all areas except along the extreme western end of the infestation. Stands west of Hickerson Park will experience increased tree killing for several years. Large areas of small, slow-growing trees, losses due to past outbreaks, and logging have reduced the potential for bark beetle attack in much of this area. Tree killing will continue but it should not reach the level experienced in stands to the east.

Recent studies[1/] have shown that individual tree control will only extend the length of an infestation and cumulative mortality would be comparable with or without control. At present there is no effective means of reducing final mortality. Listed below are methods which have been used for direct control in stands under attack by the mountain pine beetle.

1. Treat all infested trees. This includes fall and burn, fall and spray, standing spray, and standing burn. Every infested tree must be treated. These methods can be effective in slowing the movement of an infestation, thus temporarily reducing losses.

2. Control by logging. This method requires that every infested tree be cut and removed from the area.

3. Salvage logging. Salvage logging is the removal and utilization of trees killed or under attack by the beetle. Usually, however, green trees are included in such sales to make them economically practical.

4. Individual tree protection. Usually used in high value areas, this method requires spraying each tree with a preventive chemical. Unfortunately, there are no chemicals registered for such use at this time.

Therefore, first priority should be placed in harvesting infested and threatened stands which most affect full utilization of the timber resource. Since these actions will not effectively reduce overall tree losses, the immediate objective should be to utilize as much of the dead, infested and threatened material as possible.

1/ Amman, Gene D., Bruce H. Baker. 1972. Mountain pine beetle influence on lodgepole pine stand structure. J. Forestry, 70:204-209.

RECOMMENDATIONS

1. Do not use direct control (standing spray, fall and burn, fall and spray, etc.).

2. Log infested and threatened stands. First priority would be those stands with heavy bark beetle populations and/or large volume per acre.

3. Remove dead and infested trees from campgrounds before broods emerge.

4. Convert mature and overmature stands to a state of low susceptibility.

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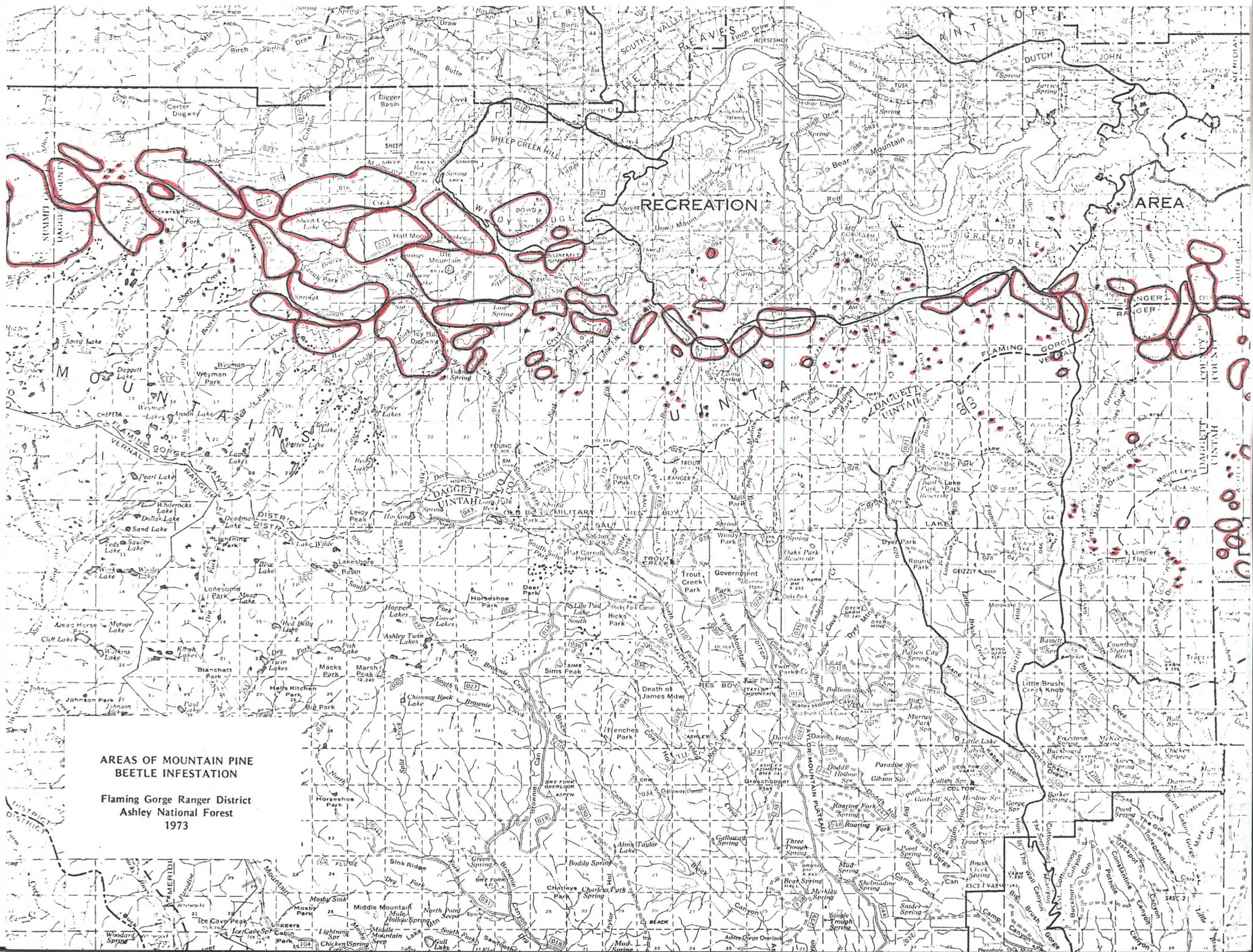
APPENDIX

Figure 1. Aerial photograph of mountain pine beetle infestation east of Greendale Junction, Ashley National Forest, 1973.

Figure 2. Ektachrome infrared aerial photograph of the same area as Figure 1.


AREAS OF MOUNTAIN PINE
BEETLE INFESTATION
Flaming Gorge Ranger District
Ashley National Forest
1973
RECREATION
AREA
UINTA MOUNTAINS
FLAMING GORGE
DAGGETT
UINTAH
SHEEP CREEK HILL
TAYLOR MOUNTAIN
Trout Creek Park
Lilly Pad Lake
Hicks Park
Sims Peak
Death of James Mdw
Frenches Park
Chimney Rock
Brownie
Lakeshore Basin
Deer Park
Horseshoe Park
Ashley Twin Lakes
Hells Kitchen
Big Park
Bianchett Park
Macks Park
Marsh Peak
Fish Lake
Dry Fork
Hopper Lakes
Lonesome Lake
Moon Lake
Sand Lake
Pearl Lake
Dollar Lake
Whiterocks Lake
Deadman Lake
Lake Wilde
Blue Lake
Weyman Park
Daggett Lake
Spirit Lake
Anson Lake
Patter Lake
Lamb Lakes
Trout Cr Peak
Leidy Peak
Hacking Lake
Old Military
Big Park
Dyer Park
Round Park
Limber Flag
Grizzly
Little Brush Creek Knob
Paradise Spr
Gibson Spr
Colton Spr
Roaring Fork
Three Trough Spring
Mud Spring
Brush Creek Spring
Gilloway Spring
Atma Taylor Lake
Bodily Spring
Green Spring
Sink Ridge
Middle Mountain
Mule Hollow Spring
North Point Seep
Mosby Park
Mosby Sink
Ice Cave Peak
Ice Cave Spr
Loosers Park
Cabin
Lightning Spr
Chicken Spring
Woodard Spring
Full Lake
Mud Spring
Single Trough Spring
Ashley Gorge Overlook
Snider Spring
Camp Canyon
Big Brush Canyon
Buckhorn Canyon
Constantine Canyon
Pothole Canyon
Little Hole
Flaming Gorge Reservoir
Red Canyon
Sheep Creek Canyon
Dowd Mountain
Bear Mountain
Ute Mountain
Hall Mountain
Tepee Lakes
Yellow Spring
Young
Trout
Ranger
Highline
Trail
Old Military
Ashley Gorge
Ashley Creek
Brownie Creek
Taylor Mountain
Dyer Mine
Kaler Hollow
Davis Hollow
Colton
Gartrell Spr
Hotline Spr
Roaring Fork
Big Brush Creek
Trout Spr
Point Spring
Gorge Spr
Brush Creek Spring
Gilloway Spring
Three Trough Spring
Mud Spring
Bear Spring
Markley Spring
Shelmadine Spring
Snider Spring
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